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EXAMINER	
CLAWSON JR, J	
ART UNIT	**PAPER NUMBER**
2511	20

DATE MAILED: 10/01/97

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☒ Responsive to communication filed on 6-5-97 ☐ This action is made final.

A shortened statutory period for response to this action is set to expire THREE month(s), 4 days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☐ Notice of References Cited by Examiner, PTO-892.
2. ☐ Notice of Draftsman's Patent Drawing Review, PTO-948.
3. ☒ Notice of Art Cited by Applicant, PTO-1449.
4. ☐ Notice of Informal Patent Application, PTO-152.
5. ☐ Information on How to Effect Drawing Changes, PTO-1474.
6. ☐ _____.

Part II SUMMARY OF ACTION

1. ☒ Claims 21-28, 34-76 are pending in the application.

   Of the above, claims _____ are withdrawn from consideration.

2. ☒ Claims 1-20, 29-33 have been cancelled.

3. ☐ Claims _____ are allowed.

4. ☒ Claims 21-27, 34-76 are rejected.

5. ☐ Claims _____ are objected to.

6. ☐ Claims _____ are subject to restriction or election requirement.

7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____. has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).

12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____ ; filed on _____.

13. ☐ Since this application apppears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

EXAMINER'S ACTION

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.
>
> (g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the

inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 21-28, as now amended, and newly submitted claims 34-76 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 21 as now amended, recites at lines 6 and 7 that each word driver circuit provides "an output voltage to a word line of said plurality of word lines". Lines 13-17, however, specifies that the voltage generator circuit provide a small output current to the word driver circuits to keep the output voltage at the first voltage when some of the word lines are selected, but lines 18-20 recite tat each of the word driver circuits brings its associated word line "to a predetermined potential lower than said first voltage when said associated word line is not selected". There is a lack of supporting disclosure to enable array species skilled in the art to be sole to made and use these apparently sufficing demands of the claims. Further, in claims such as 42, there does not appear to be sufficient supporting disclosure to enable the resistation of "...said first mode in

larger than that of said second mode" since such "modes" the never suggested or recited. The claims, as they can be understood, are thus felt inadequately disclosed by the specification to enable array person skilled in the art to be able to make and use the same.

Claims 21-28 are now amended, and newly submitted claims 34-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takemae et al 4,740,926 subsided with Grupter 4,673,829 and either of Japanese Kobiais (60-69896 in 58-185,091).

These claims apparently specify the very broad and old concept of using word-line boost in a memory array, with a charge pump circuit providing the voltage boost over the supply voltage. However, such boosted word line voltages are old and conventional in the art, as shown by the Takemae et al. patent. In '926 note Figs. 2,4A and 5A which show the wording is higher than the power supply Vcc.

While the Takemae et al. patent specifically does not recite the manner by which this boosted voltage is generated, a charge pump is understood by not only any person skilled in the art but also by one of ordinary skill in the art. However, to make things perfectly clear to someone who may be unfamiliar with the technology, Gupta is cited. Here is disclosed the conventional manner of generating such boosted wording voltages above the supply voltage, namely a charge pump. It would be obvious to one of ordinary skill in the art to use such a charge pump of Gupta

in Takemae et al as an on board charge pump is small, efficient, eliminates the need for an additional power supply and feed, as is the conventional way such wordline boost voltages are generated.

As the Asano Khui 58-105091 shows the wordline drive circuit can have a leakage for maintaining the output level at a predetermined value, whether the wording is selected is not. In the Watanabe et al. Kobai 60-69,896 there is shown me charge pump to keep the substrate voltage at a predetermined level in and a second, higher power charge pump for use when the line is actively accessed. Thus, it would be obvious from the suggestions of either Asano et al. or Watanabe skill in the art to use a plurality of charge pumps in a memory array, a more powerful are as may be needed, to provide proper voltage to the wordline of a memory array and to provide proper superstition for leakage of the output circuit in Gupta and Takemae et al as combined above.

JOSEPH E. CLAWSON, JR.
PRIMARY EXAMINER
GROUP 2500

Clawson/jm

Sept. 3,1997